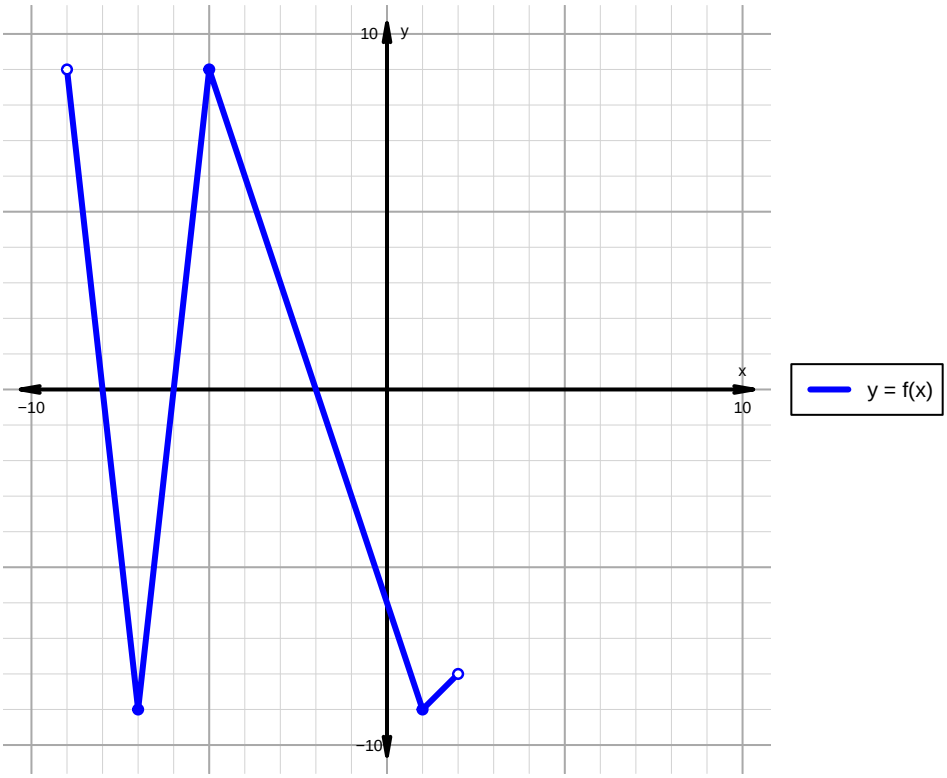
Name: Date:

Intervals, Transformations, and Slope Solution (version 31)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-8)\cup(-6,-2)$
Negative	$(-8,-6)\cup(-2,2)$
Increasing	$(-7,-5)\cup(1,2)$
Decreasing	$(-9,-7)\cup(-5,1)$
Domain	$(-9,2)$
Range	$(-9,9)$

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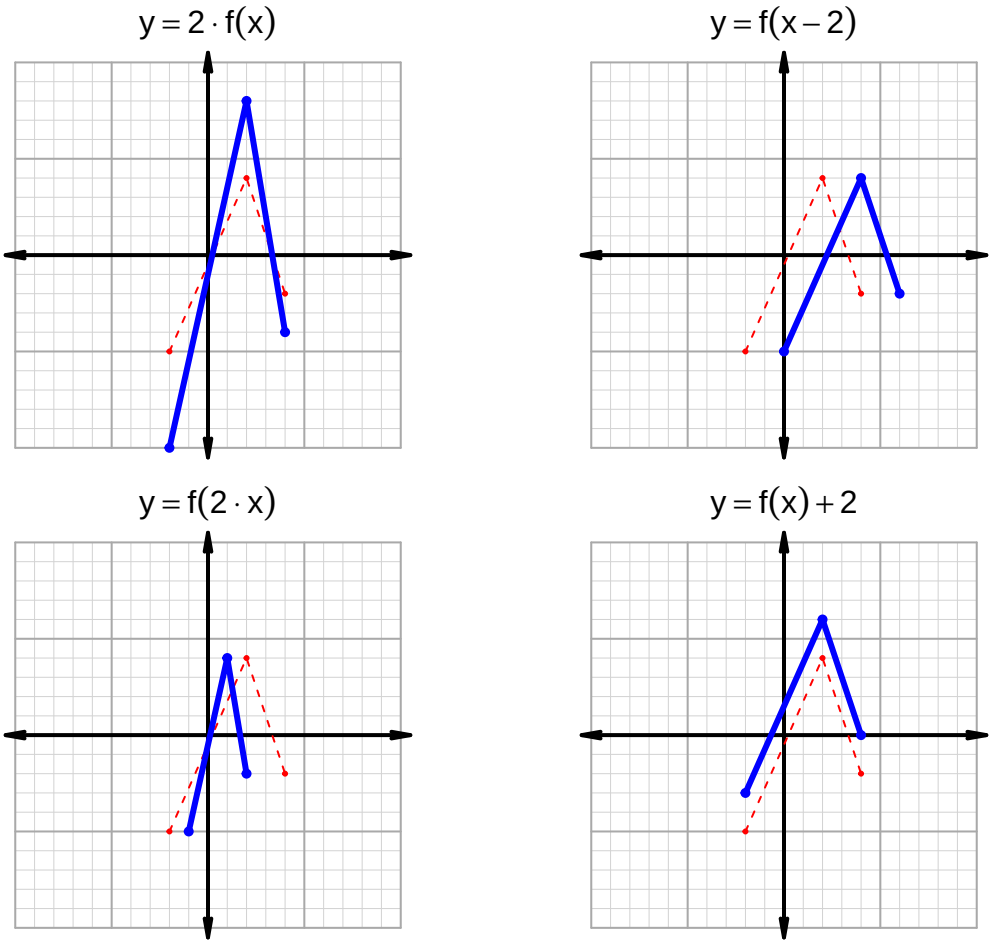
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 14$ and $x_2 = 39$. Express your answer as a reduced fraction.

x	$g(x)$
14	55
20	14
39	20
55	39

$\frac{g(39)-g(14)}{39-14} = \frac{20-55}{39-14} = \frac{-35}{25}$

The greatest common factor of -35 and 25 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{5}$$